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ABSTRACT

A study focused on the extent to which women undergo a spell of unemployment upon reentering the labor force and the factors that determine whether they undergo this spell of unemployment. Data were from two samples of female reentrants constructed from the National Longitudinal Survey for 1972. The sample of young women included those 20-28 years of age, and the sample of mature women included persons 35-49 years of age. A search model was used to examine reentrant behavior and the probability that this will lead to a spell of unemployment. Results showed that only one of every three women undergoes a period of unemployment upon reentrance. Determinants considered included education, certification, work experience, marital status, young children at home, migration, potential market wage, race, unemployment rate, and prior intentions to seek work. The significant variables for the mature women indicated the importance of flows of labor market information (education and work experience) and the importance of prior decision making in formulating plans for reentrance. Significant variables for young women came from the information vector (certification, work experience, migration) and prior search plans. Also significant were the variables of number of children at home and race. (YLB)

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Determinants of Female Reentrant Unemployment

Technical Paper

Ethel B. Jones
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THE INSTITUTE, a nonprofit research organization, was established on July 1, 1945. It is an activity of the W. E. Upjohn Unemployment Trustee Corporation, which was formed in 1932 to administer a fund set aside by the late Dr. W. E. Upjohn for the purpose of carrying on "research into the causes and effects of unemployment and measures for the alleviation of unemployment."

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Foreword

The secular rise in the full-employment rate of unemployment over the last several decades has been explained in part by reference to the growing portion of women in the labor force. The assertion has been that higher unemployment rates of women compared to men arise from the differences in the likelihood of their exposure to unemployment resulting from labor market reentry. This study questions the assumption that a spell of unemployment inevitably accompanies a woman's reentrance into the labor force.

In addition to examining reentrant behavior and estimating the probability of accompanying unemployment, Professor Jones has identified a number of personal and labor market characteristics as determinants of reentrant unemployment. This work should aid in understanding the employment patterns that account for women having higher unemployment rates than men.

Facts and observations presented in this study are the sole responsibity of the author. Her viewpoints do not necessarily represent the position of the W. E. Upjohn Institute for Employment Research.

Jack R. Woods
Acting Director

October 1983

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1
The Problem

Approximately 40 percent of the unemployment of women takes place at the stage of moving into the labor force. The assumption of economists appears to be that a spell of unemployment inevitably accompanies women's movement into the labor force, although virtually no attention has been focused on examining the validity of this assumption. Since our research indicates that movement into the labor force does *not* always involve a period of unemployment, we develop and estimate a model for examining the set of conditions that determine the extent to which entrant and reentrant unemployment does occur.

The Natural Rate

A vast economics literature concerning the relationship between unemployment and price change followed the publication of the original Phillips article [1958]. One of the developments of that literature was a concern with the "natural" rate of unemployment. This rate, as defined by Friedman, is one consistent with real wage growth that follows a ". . . rate that can be indefinitely maintained so long as capital formation, technological improvements, etc., remain on their long-run trends" [Friedman 1968,8]. When policymakers use an unemployment rate as a macro target and misread the natural rate, the ensuing policies will be either inflationary or deflationary. The natural rate can be misread when structural changes are taking place in the composition of the labor force but are not taken into account in

using the observed aggregate rate of unemployment as a target of macroeconomic policy. Among the structural changes in recent decades, as noted by Friedman and others, is that women have become a larger fraction of the labor force. Describing women, teenagers, and part-time workers, Friedman has observed [Friedman 1977,458]:

> These groups are more mobile in employment than other workers, entering and leaving the labor market, shifting more frequently between jobs. As a result, they tend to experience higher average rates of unemployment.

One outcome of the concern for the relationship between the level of unemployment and, for the recent period, inflation has been the production of estimates of the role of demographic characteristics upon the level of the observed unemployment rate [see, e.g., Cagan 1977; Flaim 1979; Gordon 1973; Gordon 1977; U.S. Office of the President 1977; U.S. Office of the President 1978]. In 1980, a presentation by James Tobin took note that "one regularity of Brookings panel meetings and papers has been the relentless rise in numerical estimates of the full-employment rate of unemployment" [Tobin 1980, 58]. Regardless of the political persuasion of the source of the estimate, all accord the importance of studying the impact of the rising labor force participation rate of women and the subsequent effect of the increased proportion of the labor force constituted by women upon the secular rise in a "full employment" rate of unemployment.[1]

The potential demographic impact of the increased proportion of women in the labor force upon the observed

1. A detailed study by Flaim [1979] minimizes the impact of the increased labor force participation of women upon the aggregate unemployment rate. He points out that increased female labor force participation has concentrated among adult women and that this group has a slightly lower unemployment rate than the overall rate [Flaim 1979,16].

unemployment rate arises because the unemployment rate of women is usually higher than that of men.[2] Economists link the higher rate to the unique dual role of women, who have major responsibility for work in the home as well as for work in the market in order to contribute to the family income stream. This dual role has meant that, for many women, their periods of market work will be intermittent, leading to more frequent reentry unemployment than men experience and hence higher unemployment rates.

Table 1-1 presents illustrative data concerning the higher unemployment rate of women and the source of the male-female unemployment rate difference for selected years of low and high total unemployment during the period since the Bureau of Labor Statistics initiated publishing annual data on the reason for unemployment. According to the information provided in table 1-1 for persons 20 years of age and over, except for the present recession, the unemployment rate of women exceeded that of men from a low of 20 percent in a year of high unemployment (1975) to 76 percent in the year (1969) at the end of the strong economic expansion of the 1960s. When unemployment is examined by source, we observe until the 1982 recession that the level of rates by sex are similar for job losing and leaving. The major reason for the sexual difference usually lies with reentry unemployment. For the observations of table 1-1, this source contributed between approximately one-third (1975 and 1982) and one-half (1969) of the female rate.

Spells and Duration

Beginning in the 1970s, the understanding of unemployment acquired a new perspective. While not abandoned, the

2. This relationship does not hold for the climb in unemployment rates from 1981 to 1982. The unemployment rate of men 20 years of age and over was higher than for women of this same age group during the first six months of 1982 [U.S. Bureau of Labor Statistics 1980, 1981, 1982].

Table 1-1
Employment Rates by Sex and Reason

Selected years	Total	Persons 20 years of age and over							
		Total		Job losers and leavers		Reentrants		New workers	
		Male	Female	Male	Female	Male	Female	Male	Female
1969•	3.5	2.1	3.7	1.6	1.8	.5	1.7	.1	.2
1971+	5.9	4.4	5.7	3.4	3.3	.9	2.3	.1	.2
1973•	4.9	3.2	4.8	2.4	2.5	.7	2.0	.1	.3
1975+	8.5	6.7	8.0	5.6	5.1	1.0	2.6	.1	.3
1979•	5.8	4.1	5.7	3.1	3.0	.8	2.3	.1	.4
1982[a]	9.3[b]	8.6	8.1	7.2	4.9	1.2	2.7	.2	.5

SOURCES: U.S. Bureau of Labor Statistics, *Handbook of Labor Statistics, 1978,* Bulletin 2000, Washington, DC: U.S. Government Printing Office, 1979; *Employment and Earnings,* 27 (January 1980), 28 (January 1981), 29 (various issues); and U.S. Department of Labor, *Employment and Training Report of the President,* Washington, DC: U.S. Government Printing Office, 1981.

•Cyclical low; + cyclical high.

a. Average for first eight months of the year.

b. The total rate is calculated from seasonally adjusted data.

older emphasis on unemployment by type according to the categories of frictional, structural, seasonal, and cyclical gave way in analysis to the framework of studying an unemployment rate as a function of the dimensions of the number of spells of unemployment and the average duration of a spell of unemployment. The measured rate of unemployment depends upon a person not being employed and being available for work during the reference week of the monthly survey. If, between two groups of individuals, one group more frequently enters the state of unemployment, the number counted as unemployed during the reference week for that group will be higher. In addition, the probability of being observed as unemployed during the reference week will be greater for the group having a longer period for each unemployment spell because their unemployment spells are more likely to overlap the survey reference week.[3]

Within the conceptual framework of spells and duration, the consensus is that, compared to the unemployment rate for men, the higher rate for women is generated by their more frequent spells of unemployment [Hall 1972; Hall 1970; Marston 1976] instead of their relative position with respect to the mean duration of a spell of unemployment.[4] Thus, our study concentrates upon the dimension of the spells of unemployment.

3. For a statement of the relationship between the unemployment rate and spells and duration, see Marston [1976].

4. An exception to this view appears in the work of Barrett and Morgenstern [1974], who held that the higher unemployment rate for women lay with their longer duration of a spell of unemployment. Their labor force turnover figures were slightly higher for women than for men. Stafford has contended that "[o]verall, one can conclude that the duration of unemployment is not very different between men and women" [Stafford, 334]. Marston [1976] has argued that women have shorter spells of unemployment than men but that the difference in duration does not offset the greater spell frequency sufficiently to reduce their unemployment rate below that of men.

The Standard Assumption

Despite the emphasis on the movement into and out of the labor force as the important factor in accounting for the higher unemployment rates of women, economists have made little effort to explore the nature of this process as it associates with a woman's undergoing a spell of unemployment.[5] The standard assumption appears to be that the person reentering the labor force will undergo a spell of unemployment. Among the few examples of a specific statement of this assumption are those by Fleisher-Kniesner and Niemi. Fleisher and Kniesner observed that

> [m]uch unemployment among youth and women is associated with job search almost necessarily accompanying mobility from outside the market labor force to jobs in the market sector [Fleisher and Kniesner 1980, 376].

Niemi [1974] called attention to the difference between job search from within and job search from outside the labor market and definitional aspects of labor force procedure. Because designation as employed takes precedence over unemployed, search by persons within the labor market who have a job is not enumerated as unemployment. "Employment" in the home does not take precedence over job search, so that housewives who search are enumerated as unemployed. Direct movement from outside the labor force to employment because the person is offered a job she did not seek is described as the "exception," and direct movement is noted as "necessarily" involving unemployment.

5. Two exceptions are [Blau and Kahn 1981; Jones and Long 1981]. Jones-Long included an entrant variable in a study of the impact of part-week work upon the probability and duration of a spell of unemployment by women. Blau-Kahn provided estimates of the duration and incidence of entrant unemployment for young men and young women. Because of the definitions of entrant (and reentrant), neither of the studies explicitly link the entrance process to whether the person underwent unemployment.

We have located only one piece of research that, in its procedural aspects, infers that the unemployment rate of entrants and reentrants may not be 100 percent. Fellner's [1978] attempt to understand the difference between male and female unemployment rates involved the estimation of entrant and reentrant unemployment rates for males and females. His figures were 19.0 and 17.2 percent, respectively [Fellner 1978, 106]. While we later suggest (section 2) that his procedure has certain shortcomings, his work does take issue with the point of view that movement into the labor force produces an almost certain spell of unemployment.

The Report Outline

Data sources. The data sources for this research are the 1972 National Longitudinal Surveys (NLS) of young and mature women.[6] These surveys, each numbering approximately 5,000 individuals, were initiated in 1968 and 1967. We select for study the 1972 surveys because they are the earliest having a detailed accounting of the person's sequential job history for an identical time period with respect to both the young and mature women.[7] We use the NLS because of the wealth of information describing a sample member's demographic and economic characteristics. Selecting a date close to the initiation of the surveys minimizes the problem of attrition of participants since the NLS did not have a replacement procedure. The persons that we study were ages 20-28 ("young") and 35-49 ("mature") in 1972.

Contents. Section 2 of this report describes our procedure for identifying an instance of movement into the labor force and whether a spell of unemployment accompanies the move. In this same section, we present our estimates of the

6. For a description of these samples, see [National Longitudinal Surveys Handbook 1975].

7. The first of the detailed labor force history surveys were undertaken in 1971. The 1971 surveys covered a one-year period for young women but a two-year period for mature women.

extent to which unemployment accompanies the shift from nonmarket to labor market activity. Sections 3 and 4 are concerned with understanding why some women accompany the shift with a spell of unemployment while others do not. In section 3 we outline the model used for examining the factors that influence the woman's probability of undergoing an entrant or reentrant spell of unemployment. In this same section we describe the variables constructed from the NLS data for testing the model. The empirical tests of the model are presented in section 4. Since the mature women were initially the main focus of our research, their findings are presented first. The last part of our report, section 5, relates our empirical findings to policy implications.

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2
Extent of Reentrant Unemployment

Our study focuses upon whether or not a woman undergoes a spell of unemployment as she moves from outside the labor force to labor force status during the period of approximately one year between the National Longitudinal Surveys (NLS) of 1971 and 1972. A reentrant is defined as anyone who undertook in this time interval a spell of not being in the labor force and followed the not-in-the-labor-force spell by the state of being employed or unemployed.

The reentrants of our study include both new entrants and reentrants as defined by the U.S. Bureau of Labor Statistics (BLS) in their published reports on the reasons for unemployment.[1] The BLS differentiates between entrants and reentrants on the basis of whether the person had ever worked at a full-time job lasting two weeks or longer. According to the BLS definition, reentrants are ". . . persons who previously worked at a full-time job lasting 2 weeks or longer but were out of the labor force prior to beginning to look for work," and "new entrants are persons who never worked at a full-time job lasting 2 weeks or longer" [BLS 1981, 216]. It is reasonable to assume that the mature

1. See, for example [BLS 1981, 174].

women's sample is comprised of reentrants.[2] This assumption may be less descriptive of the young women's sample. However, only one-fifth of the young women's sample had recently been enrolled in school.[3] Among this one-fifth, 44 percent had held a full-time (35 hours or more per week) job during the twelve months preceding the 1971 survey.

We next describe our processes for identifying reentrants, constructing the samples, and observing unemployment. The amount of reentrant unemployment is reported together with evidence from other studies concerning reentrant unemployment.

Reentrant Identification

Reentrants are identified from the work history segment of the NLS and fall into three categories: (a) entry into employment; (b) unemployed at the 1972 survey but worked during the year; and (c) unemployed or not in the labor force at the 1972 survey and the work history questions are not relevant.

(a) *Entry into employment.* The 1972 NLS questionnaires attempted to account for all of a person's time between the 1971 and 1972 surveys. For each occurrence of a recorded employment activity, including the job held at the time of the 1972 survey, the respondent was asked if there was a period of not working prior to this job, the length (in weeks) of the

2. Where the length of work experience can be identified, all of the mature women of our sample reported working at least 6 months or more during one of the years up to 1967. A study [Jones and Long 1978] of the lifetime part-week, full-week employment of the NLS mature women's samples found that, among women who had had children, only 0.6 percent had never worked for at least six months in at least one year between leaving school and 1967. Furthermore, among those who had worked, only 4.6 percent showed experience in only part-week jobs.

3. Using information about the year that the person was last enrolled in school from the 1973 NLS, we find that four-fifths of the young women's sample had no association with formal schooling during the years 1971-1973.

nonwork period (PNW), and the weeks of this nonwork period spent looking for work or on layoff from a job (PU). If the spell of not working did not begin before the date of the last interview, data were recorded about the prior employment activity and the question sequence about a period of not working was again initiated. The process continued until the date of the last interview was reached. For each instance where there was a period of not working followed by employment, we have identified one of eight possible categories that are listed below. Categories i and ii imply that the person never left the labor force despite a period of not working because the person was unemployed during the period of not working. The remaining categories imply an interruption to being in the labor force and hence that the person was a reentrant.

i. PNW = PU, and there was a prior job during the 1972 interview period.

ii. PNW = PU, the initial date of not working preceded the date of the last interview, and the labor force status at the last interview was either employed or unemployed.

iii. PNW = PU, the initial date of not working preceded the date of the last interview, and the labor force status at the last interview was not in the labor force.

iv. PNW > 0, PU = 0, and the initial date of not working preceded the last interview.

v. PNW > 0, PU > 0, PNW > PU, the initial date of not working preceded the last interview, and the labor force status at the last interview was not in the labor force.

vi. PNW > 0, PU > 0, PNW > PU, the initial date of not working preceded the last interview, and the labor force status at the last interview was unemployed.

vii. PNW > 0, PU = 0, and there was a prior job after the last interview.

viii. PNW > 0, PU > 0, PNW > PU, and there was a prior job after the last interview.[4]

(b) *Unemployed at 1972 survey, worked during the year.* For persons who were classified as unemployed at the time of the 1972 survey but reported that they held a job lasting two weeks or more since the 1971 interview, data are provided on the number of weeks since they last worked (PNW) and the number of weeks that they had looked for work or had been on layoff (PU). If PNW > PU, the unemployed person is classified as a reentrant.

(c) *Work history questions not relevant.* A segment of the NLS surveys duplicates in principle the questions of the monthly Current Population Survey that serves as the source for the aggregate data on national unemployment rates. If, in this portion of the NLS, the person was identified as unemployed or not in the labor force and as not having worked at a regular job or business for two consecutive weeks since the last interview date, no work history data were obtained. However, these people were later asked additional questions about weeks worked and weeks looking for work or on layoff from a job. If, in these additional questions, the person reports weeks of work or weeks of

4. The data for this category do not enable identification of spells of unemployment following the last job as different from spells of unemployment accompanying reentrance. However, the data do provide information on why the person left the last job. We assume that if the person left the last job for job-related reasons (layoff and quit) that the spell of unemployment between jobs followed the last job and was not reentrant unemployment. If the woman left the last job for personal reasons (the categories of getting married, health, pregnancy, and "other"), we assume that the spell of unemployment between jobs was that of reentrant unemployment. Only instances of reentrant unemployment are counted in category viii.

The exclusion of job-related spells does not modify our important finding that reentrance is usually not accompanied by a spell of unemployment. If the spells of unemployment following a job-related reason for leaving the prior job are counted as both instances of reentrance and reentrant spells of unemployment, the unemployment incidence accompanying reentrance rises from .33 to .37 for the sample of mature women and from .34 to .42 for the sample of young women.

unemployment since the last interview date, she is classified as a reentrant.[5]

Among the mature women, categories a, b, and c accounted for 79.9, 5.7, and 14.3 percent respectively of the count of reentrant spells. The corresponding figures for the young women were 78.1, 10.1, and 11.9 percent.

Sample Selection

The sample of mature women, which numbers 528, includes all persons from the 1972 survey who were classified as reentrants according to the criteria described above. Our model for studying reentrant unemployment describes a decisionmaking process that emphasizes a dual role for the woman between work in the market and "work" in the home. Among the mature reentrants, only 1.9 percent had never married. Among reentrants in the *total* 1972 NLS for young women, 44.9 percent had never married and 27.1 percent were enrolled in school at the date of the survey. In order to make the household-market association of the two age groups more similar, we restrict the study of reentrants among the young to persons 20 years of age and over in 1972 who were not enrolled in school at the time of the survey. Among the 802 persons of this sample, 20.9 percent had never married. For our empirical work the unit of observation is the individual, not a spell of reentry. Multiple spells of reentry occurred for 5.1 percent of the mature women and 10.5 percent of the young women in the samples. By focusing upon individuals instead of spells, we study approximately 90 percent of the spells of reentry in each sample.

5. We have omitted persons who report both work and unemployment because we do not know whether the spell of unemployment occurred before or after work. These persons numbered only eight cases in the mature women's sample.

Observing Unemployment

All spells of unemployment have been independently identified and a record maintained of where the spell occurred within the person's labor force history for the year. This procedure enables us to link spells of unemployment to spells of reentrance. Table 2-1 shows a tabulation of reentrant spells and accompanying spells of reentrant unemployment.

Table 2-1
Incidents of Labor Force Reentry
and Spells of Accompanying Unemployment

	Number of individuals			
	Young		Mature	
Spells	Reentry	Unemployment	Reentry	Unemployment
1	718	238	501	183
2	78	11	24	2
3	5	0	3	0
4	1	0	0	0

Reentrant Unemployment Incidence

Our work on the counts of spells of reentry into the labor force and the accompanying spells of unemployment shows that reentry into the labor force is not typically accompanied by a spell of unemployment. Only 34.2 percent of the reentries into the labor force by the young women and 33.5 percent of the reentries by the mature women were accompanied by a spell of unemployment. Among women reentering the labor force, a spell of unemployment accompanied reentrance for only 36.7 percent of the young women and 35.0 percent of the mature women.

A reentrant may experience unemployment at times within the year other than the point of reentrance. While the figures

are 36.7 and 35.0 percent for those reentrants who experience spells of unemployment when coming into the labor force, we measure that 51.0 percent of the sample of young women and 43.9 percent of the sample of mature women underwent a spell of unemployment during the time span that is studied. While a reentrant is more likely to undergo a spell of unemployment, the reentrants who experience unemployment undergo multiple spells in about the same amount as other unemployed labor force participants.[6] The mean level of total spells for unemployed persons were: young--reentrants, 1.22 and other, 1.21; mature—reentrants, 1.17 and other, 1.15.

Other Studies

We have located two other studies that are pertinent to providing evidence on the incidence with which female reentrants undergo unemployment. Our estimate that unemployment accompanies reentrance for approximately one-third of the reentrants is considerably above Fellner's [1978] figure of a reentrant unemployment rate of 17.2 percent for women 20 years of age and over, but considerably below the Blau-Kahn [1981] reentrant unemployment incidence figures of 51.0 percent and 64.1 percent for *young* white and black women respectively.

Fellner's estimating procedure has characteristics that would bias his figure downward. Fellner's unemployment rate is calculated from a fraction which has as its numerator the average monthly count of unemployed reentrants.[7] The denominator is the sum of the net addition to the female labor force for the year plus a count of persons who dropped

6. We have calculated the incidence rate of a spell of any type of unemployment for all mature women who were in the labor force between the 1971 and 1972 NLS. The figure is 16.4 percent; for reentrants, 43.9 percent.

7. For a description of Fellner's procedures and data see [Fellner 1978, 104-106] and the source cited by him in footnote 4 on page 105.

out of the labor force during the year. The numerator and the net addition for the year are derived from monthly averages; the larger part of the denominator, the count of dropouts, is an annual sum. For the count of dropouts to be conceptually comparable to the numerator and to the net addition to the labor force, the annual sum would have to be allocated on a monthly basis, which would yield a smaller denominator for the fraction and thus a larger rate of reentrant unemployment.

The Blau-Kahn data source is identical to ours (NLS) and for almost the same reference period (1970-1971, 1971-1972). Both our study and the work of Blau-Kahn include only persons not enrolled in school, although the Blau-Kahn sample does not exclude persons under 20 years of age.

The Blau-Kahn definition of a reentrant ("entrant") refers to persons out of the labor force ". . . at the time of the initial survey . . ." and in the labor force at the subsequent survey [Blau and Kahn 1981, 271]. We presume that this means, for example, that reentrants from the 1970-71 period are persons out of the labor force at the 1970 survey but in the labor force in 1971. These reentrants would be pooled with a group similarly obtained for the 1971-72 period. The procedure will tend to omit persons of short labor force duration because of not classifying as a reentrant persons who move into and out of the labor force between survey dates. The procedure will also omit study of the reentrance spells of persons in the labor force at both the beginning and ending dates of each study period. Hence, differences can arise between the Blau-Kahn results and ours because of procedural variation in identifying a reentrant. In addition, the incidence of unemployment of Blau-Kahn refers to all types of unemployment by persons who are classified as entrants and not merely the unemployment spell accompanying reentrance: "Unemployment experience was determined on the basis of the whole survey period, and thus

may include more than one spell of unemployment" [Blau and Kahn 1981, 271]. An average of the racial Blau-Kahn incidence estimates, where the weights are the racial composition of the 1972 NLS for young women, yields a figure (54.7 percent) close to ours (51.0 percent) for the incidence of experiencing any spell of unemployment by reentrants. Thus, the "large" Blau-Kahn findings do not contradict our estimate that only about one out of three young women (36.7 percent) reentering the labor force accompany their reentrance with a spell of unemployment.

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3
The Model and Variables

Introduction

All labor market search is not identified as unemployment.[1] Whether the activity of looking for a job is designated as unemployment depends upon the definition associated with the labor force concept. This concept provides the basis for the counts of the unemployed and offers the means for classifying each member of a population group as employed, unemployed, or not in the labor force during a particular survey week. The initial thrust of the labor force concept is to identify those persons who are employed. Three groups comprise the employed: (a) those who do any work for pay or profit; (b) unpaid employees of a family enterprise who work for as much as 15 hours; and (c) persons with a job or business ". . . from which they were temporarily absent because of illness, bad weather, vacation, labor-management dispute, or personal reasons . . ." [BLS 1980, 209]. Employed people who search for a job are not counted among the unemployed. The unemployed include persons not employed who are available for work during the survey week and ". . . who made specific efforts to find a job

1. For example, the quit literature acknowledges that the search process is undertaken even though the person is classified as employed. For illustrations of this approach, see [Barnes and Jones 1974; Blau and Kahn 1981; Parsons 1972].

within the past 4 weeks . . ." together with persons ". . . waiting to be called back to a job from which they had been laid off . . . ," and persons ". . . waiting to report to a new wage or salary job within 30 days" [BLS 1980, 209]. All others are classified as not in the labor force.

Information about job openings is not monopolized by the unemployed. Persons not in the labor force, as well as unemployed (and employed) persons, will have varying degrees of labor market information exposure including informal contacts with prior employers, exposure to media announcements such as is obtained by reading a newspaper or maintaining a subscription to a professional journal, and the conversational insights offered by friends and relatives. Women who are not in the labor force will differ both in their amount of exposure to information sources and in their ability to evaluate that information. Some women not in the labor force will decide to act upon the information about the labor market that is available to them, and, as a result, move directly from the status of not in the labor force to the status of employed.

In the first segment of this section we develop a model that enables us to indicate specific characteristics of women and of the labor markets in which they live that serve to differentiate those who reenter the labor force with an intervening spell of unemployment from those women who reenter the labor force without unemployment. In the second segment we explain how these specific characteristics are identified for testing the model by using data from the NLS samples of young and mature women.

The Model

Analytical Framework

Women reenter the labor force for a variety of reasons. A divorced woman may have experienced the loss of income. A

husband-wife family may find the husband's income insufficient for what the family views as its needs. A woman may feel that her children have reached an age where the household no longer needs her complete attention.

Regardless of the reason for labor force reentry, our goal is to develop a framework that can provide insight into whether the woman is employed or undergoes a period of unemployment when she moves into the labor force. For purposes of analysis, we organize the study of whether employment or unemployment occurs upon reentry around four concepts: (a) her access to labor market information, (b) her acceptance wage, (c) the mean of the distribution of market wage offers applicable to the woman, and (d) her search plans.

Information

For a woman to reenter the labor force without a period of unemployment, she must have knowledge of an existing job opening with an employer who is willing to hire her.[2] All women are not identical in their knowledge of existing job openings. Personal characteristics that were enumerated about NLS respondents and that can differentiate among them in their knowledge of existing job openings include the number of years of formal education, certification in a profession or trade, the duration of work experience, the recentness of work experience, prior labor market search, and migration.

Education, certification, and work experience affect the probability of the woman reentering the labor force without

2. She may also reenter the labor force without a period of unemployment if she can both search for and find a job within a week, since the NLS data identify only weeks, and not partial weeks, of unemployment. Jones and Long [1981] have argued that this rapid generation of a job offer is most likely to occur for part-week workers. We do not include a part-week variable in this study because of an inability to identify employment for the groups "unemployed at 1972 survey, worked during the year," and "work history questions not relevant" (section 2 above).

unemployment because these activities are associated with both the learning process of how one acquires employment and the expansion of the network of friends and acquaintances who constitute job information sources. As people proceed through school and college, or achieve certification, they have the opportunity to learn about the variety of methods of job seeking and which ones are more successful for their particular work interests. In addition, they have the opportunity to become more adept at the skills of job search (e.g., how to complete an application blank; how to conduct a job interview). A person with a longer duration of work experience will also have more experience at observing how fellow workers obtain jobs. Thus women of more education, certification, and experience can more effectively act upon information they receive about job openings even though that information comes to them while they are not in the labor force.

An important source of information about job openings is one's friends and acquaintances.[3] Women of more education, certification, and longer duration of work experience have higher labor force participation rates.[4] Each of the activities of education, certification, and work generates a network of friends and acquaintances. Because of the higher labor force participation rates of their associates, women of more education and work experience and with certification in a profession or trade would have access to more informa-

3. Friends and relatives as a source of job market information is recognized, for example, by the monthly tabulation of the Current Population Survey of methods used to seek work. According to these data, 11.3 percent of female job seekers 20 years of age and over in 1979 sought assistance from friends and relatives in looking for a job [BLS 1980].

4. Bowen and Finegan [1969] in their major study of labor force participation rates observed that, other relevant factors held constant, women of more education have higher labor force participation rates. Jones and Long [1979] have noted that, at least for women in the labor force, education and certification are positively associated. If two groups of women differ only in their length of work experience, the labor force participation rate of the group of longer experience will be higher because, by implication, more of the group must be in the labor force at any point in time.

tion about job openings, and thus a lower probability of reentering the labor force as unemployed.

The role of experience in providing both a network of contacts and an ability to evaluate labor market information will depend not merely on the length of the work experience but on how recently that experience occurred. For example, the more recent the experience, the higher the probability that the woman's contacts are with employed instead of not-in-the-labor-force persons. Hence, persons of more recent labor force experience have a higher probability that the job openings of which they are informed by friends or relatives are currently vacant. Knowledge about the labor market that leads to reentry without unemployment can also be obtained from a recent period of active search in that market. For example, women who recently had a period of unemployment would know of previously rejected job openings that may still be unfilled.[5] Thus reentry could occur without unemployment. We indicate recent labor market search in our model by means of a variable that designates whether the woman reports unemployment since the last NLS survey.

Migration can be expected to interrupt the network of job information sources. Also, the migrant, because of her lack of acquaintance with the new market, may incorrectly perceive her opportunities at her new location. Hence, the migrant may be expected to have a higher probability of reentry unemployment both because her flow of news of job openings is reduced and because she may be more inclined to reject a position offered to her because she is not aware of the realities of the new job market.

Acceptance Wage

Whether a woman reenters the labor force with or without unemployment depends not only upon the labor market in-

5. Sandell [1980a] has noted a relationship between the receipt of job offers and prior job search.

formation flows available to her but also upon the wage ("acceptance wage") at which she is willing to be employed. If the job offer or offers that she learns about from friends and acquaintances are below her acceptance wage, she will decide to search for another offer and thus enhance her probability of reentering the labor force with a spell of unemployment.[6] Hence, the level of the acceptance wage becomes an important factor in determining the probability of reentry unemployment.

The acceptance wage is determined by comparison of the marginal (additional) returns with the marginal (additional) cost of searching for another offer. In other words, if a woman's information network yields a job offer, whether she reenters the labor force as employed or unemployed depends upon what she perceives as the marginal returns from seeking the next offer compared with the marginal costs of seeking that additional offer. As long as the marginal returns exceed the marginal cost she will seek an additional job offer and decrease the probability that she will reenter the labor force as employed. All other factors held constant (including marginal costs), anything that increases marginal returns enhances the probability that she will reenter the labor force as unemployed. Similarly, all other factors held constant (including marginal returns), anything that increases marginal costs reduces the probability that she will reenter the labor force as unemployed because the probability is enhanced of her accepting a job about which friends or acquaintances informed her.

The marginal returns from her searching for another job offer is a function of the average wage and the distribution of wages that she believes to be associated with her labor

6. For descriptions of the perspective of unemployment that emphasizes unemployment as a process in which the individual conceptually calculates an acceptance wage for employment and compares this wage with the wage of a job offer see [Barnes and Jones 1974; Ehrenberg and Oaxaca 1976; Sandell 1980b].

market employment opportunities, how long she expects to receive the wage of the job offer that she accepts (her expected job tenure), and a discount rate.[7] The discount rate may be viewed as a parameter indicating the immediacy of the pressures upon her to find employment. Among these determinants of marginal returns, we include variables in our model intended to indicate her average wage, expected job tenure, and the immediacy of the pressures to accept a job offer.

The marginal costs of search depend upon the prices of the "inputs" of looking for employment. The inputs of search are the opportunity cost of time spent looking for another job offer and the direct costs of market goods inclusive of, for example, the services of a private employment agency, bus fare, child care costs, or the purchase of a newspaper. We include in the model only a variable to indicate the opportunity cost of time because we assume that direct costs are the same among all women.

Average wage. Compared with determining a reentrant's acceptance wage, estimation of the acceptance wage is easier for the potential or actual job quitter, a person on layoff, or a person discharged from a job. In these cases, the person's evaluation process can be considered to initiate with the wage of the current job (potential quit) or the wage of the job recently terminated. Because reentrants do not necessarily have a recently observable wage base, we have estimated a potential wage to represent the woman's perception of the wage that enters her calculation of the marginal returns from search. The higher the potential wage, the higher will be her acceptance wage.

Job tenure. Our proxy variables for job tenure expectations are marital status and age. The latter variable is used only in the model applicable to the sample of young women.

7. Stigler's [1962] pioneering article on information and search describes the role of these variables in the search process.

We assume for both age groups that a married woman, spouse present has a shorter expected job attachment than other women. Members of the NLS sample of young women who are married, spouse present are more likely than other young women to contemplate a work interruption associated with the birth of a child. For the samples of young and mature women, the married woman, spouse present may have her attachment to an employer interrupted by a job location change for the husband if he is the family's major income source.

Age, as well as marital status, is introduced into the model for young women because that sample is inclusive of persons who recently terminated their schooling. The early years of labor market experience tend to be a period of trial and error in sampling different work situations. Reentrants who are recent school leavers can be expected to plan for experimenting with different work situations, and hence to have shorter job tenure and thus a lower acceptance wage. The lower acceptance wage of younger women leads to an hypothesized positive relationship between age and the probability of a spell of reentrant unemployment.

Discount rate. The variable selected to proxy for the discount rate in determination of the acceptance wage is the level of husband's income.[8] If we assume that women of higher income husbands do not have the same urgency to contribute to the family income stream, then women of higher income husbands may be said to have a lower discount rate. They will be less likely to accept job offers that come from a network of friends and acquaintances. Instead, they will search the market for higher paying offers and increase the probability of reentrant unemployment.

Marginal cost. We have suggested that marginal cost has the two components of alternative worth of time that is used

8. Sandell [1980b] provides an explanation of "other" income and the discount rate.

in looking for a job and goods and services that assist in looking for a job. We have assumed that the market price of the goods-and-services component of cost does not differ among women, and hence does not produce differences in the acceptance wages among persons not in the labor force. Sellers do not discriminate among women in the cost of goods and services purchased to assist in looking for a job. The prices of a dress to wear for a job interview, of a newspaper to read for announced job openings, or of the bus fare needed for transport to the job interview are the same for all women. Women do differ, however, in the alternative uses for the time that they spend looking for a job.

A major source of differences in the value of women's time is whether or not there are children in the household. In our model we investigate two variables concerning children in the household. For both samples we examine if the presence of a child less than six years of age in the household decreases the probability of a woman entering the labor force with a spell of unemployment. The preschool child is assumed to require substitute care when the woman undertakes job search. The presence of the preschooler raises the marginal cost of search and lowers the acceptance wage. At a lower acceptance wage, the woman is more likely to enter the labor force by accepting a job about which she receives information while not in the labor force.

We also examine, for the sample of young women, a variable that counts the number of children in the household. We expect a larger number of children to accompany a lower acceptance wage, and thus to reduce the probability of reentry unemployment. Because the sample of mature women includes persons toward the end of their child-bearing years, a variable of the number of children may indicate that there are older children in the household who can care for a preschooler. In contrast, for the young women, an increasing number of children in the household is

more likely to mean an increasing number of children under the age of six years to be cared for in the household. This would make the arrangements (and cost) for child care while engaging in search more difficult for young women. A neighbor may be willing to accommodate one preschooler but not two. Child care centers do not accept a second child free while the mother searches for work.

Market Wage-Offer Distribution Mean

The probability of a reentrant accepting a particular job offer, including one that comes from information channels while she is outside the labor force, depends upon the relationship between her acceptance wage and the mean of the wage-offer distribution that she faces in the labor market. Individual characteristics of the woman or characteristics of the labor market in which she searches may cause her distribution of offers to include a more numerous set of offers at zero wages so that the mean of the market wage-offer distribution is lower and the probability of reentrant unemployment is higher among women of identical acceptance wages.[9]

Our model investigates four situations that may lower the mean of the market wage-offer distribution. These situations are indicated by the variables of race, health, the unemployment rate of the area of residence, and the density of traditional female employment opportunities in the area of residence (sample of mature women).

A black person or a person with a health limitation can receive information from a friend about a job offer while she is not in the labor force. However, when she applies for the job, discrimination or job requirements may mean that the employer rejects her. For our analysis, this rejection is con-

9. A more complete account of the appearance of the zero wage offer appears in [Barnes and Jones 1974].

sidered a zero wage offer.[10] If a woman lives in an area of a higher unemployment rate or one in which the industry employment structure has a lower proportion of females, the ratio of applicants to openings will be larger. Thus, as in the situations for race and health, when application is made for the job, there is a higher probability of rejection by the potential employer. For persons who are black, have a health impairment, live in an area of higher unemployment, or live in an area with an employment structure less favorably disposed toward females, we hypothesize that locating a job offer equal to or greater than her acceptance wage will take place less frequently from outside the labor force and hence that the probability of a spell of unemployment upon reentry will increase.

Search Plans

The variables of the model are measured at an interview date in 1972, although the process of generating the characteristic (for example, receipt of certificate to practice a profession or trade, the area's unemployment rate, the health limitation) has taken place over some prior time period.[11] Similarly, the decision to enter the labor force that is observed by our data for the period between the surveys of 1971 and 1972 may have been made prior to this period and may have been influenced by dimensions of the variables of our model that were different from those existing at the 1972 survey date. We "control" for this prior decisionmaking by including in our estimating equations a variable constructed from information obtained at the 1971 National

10. The possibility of discrimination or a health impairment lowering the woman's acceptance wage because persons who are black or have health impairments are employed in lower wage jobs has already entered the model since the estimating equation for the acceptance wage proxy includes both of these variables (see potential wage, below, this section).

11. Mincer [1966, 80] has provided evidence that differences among area unemployment rates in cross-section do not reflect short-run demand changes but, instead, are representative of ". . . long-run structural differences among areas to which participation adjusts."

Longitudinal Surveys. Interviewees who were not in the labor force at the date of the 1971 survey were asked if they intended to look for work during the next 12 months and the means by which they planned to seek work. We have constructed a dummy variable that assumes the value one (otherwise zero) if the person declared at the 1971 survey date both the plan to look for work and the intention to use a recognized work-seeking activity. Persons possessing these characteristics are assumed to appear in our data as unemployed reentrants because they have stated an intention to acquire information through job search instead of simply responding to information available from a network of contacts.

Expected Relationships

In table 3-1 we recapitulate our vectors of independent variables, provide the variables with abbreviated designators to be used throughout the report, and show the expected sign relationship between a higher value of the variable and the probability of undergoing a spell of reentrant unemployment.

Variable Construction

Many of our variables are defined and constructed in a manner customary in NLS tape use. However, sometimes estimation of variable values has been undertaken because of the nature of the variable or because data were not available for a large segment of the sample. The variable OLFS has been defined earlier as persons who are not in the labor force at the time of the 1971 survey but who intend to use a recognized work-seeking activity in the ensuing 12 months.

Table 3-1
Independent Variables of the Model and Their Predicted Directional Impact Upon Reentry Unemployment

Vector	Variable	Designating notation	Predicted sign
Information	Education	ED	-
	Certificate	CERT	-
	Experience, total	EXP	-
	Experience, recent	REXPL	-
	Labor force status, last survey period		
	Employed	LYEM	-
	Unemployed	LYUN	-
	Not in the labor force	LYNILF	+
	Migrant	MIG	+
Acceptance wage	Potential wage	POTWAG	+
	Married, spouse present	MSP	-
	Age	AGE	+
	Husband's income	HINC	+
	Child in home less than six years of age	CLS	-
	Number of children	NCH	-
Job offer distribution	Race	RACE	+
	Health limitation	HLTH	+
	Area's unemployment rate	URATE	+
	Area's employment structure	FDI	-
Other	Intends to seek work	OLFS	+

We define each variable below and, where relevant, provide a careful description of its construction. Table 3-2 presents the values of sample means and the proportion of the sample for whom data were not available when "not available" counts have been made. Definitions and additional comments are first provided for the "customary" type of variables. Later we describe the variables relating to labor market experience and the potential wage.

"Customary" Variables

ED: years of school completed

CERT: young—the surveys of 1968 through 1972 indicate evidence of receiving a certificate to practice a profession or trade; mature—surveys of 1967-1972 indicate receipt of a certificate to practice a profession or trade during this period. (We do not use the data for mature women on all years since leaving school because the variable is intended to be indicative of "current" labor market information. The proportion of mature women with a certificate would rise from .09 to .18 if the longer time period of coverage had been used.)

MIG: the person lived in a different county or Standard Metropolitan Statistical Area than at the time of the last interview. (For young persons, we also estimate the model with a variable MIGNJ that refers to persons who changed residence but had no job lined up at the time of the move. The proportion of young migrants falls from .21 to .15 when MIGNJ is the form of the independent variable.)

MSP: the woman is married and living with her spouse

AGE: chronological age at the time of the survey

HINC: husband's income; for young women, the sum of the reported variables of his wage and salary income, income from business or farm, unemployment compensation, and

Table 3-2
Variable Means ($\bar{X}$) and, Where Calculated, Data not Available (NA) Counts

	Sample			
	Young		Mature	
Variable	$\bar{X}$	Percent NA	$\bar{X}$	Percent NA
ED[a]	11.95	-0-	10.74	0.2
CERT	.22	. . .	.09[b]	3.0
EXP	1.60	7.2	10.72[c]	27.5
REXPL	.96	. . .	1.41	. . .
REXPI	. . .	. . .	.24	. . .
LYEM	.43	. . .	.35	. . .
LYUN	.48	. . .	.17	. . .
LYNILF	. . .	. . .	.29	. . .
MIG	.21	. . .	.06	. . .
POTWAG	5.4270[d]	. . .	5.4731[d]	. . .
MSP	.69	. . .	.78	-0-
AGE	23.50	-0-	41.41	. . .
HINC	$4606[e]	2.9	$5558[e]	35.2
CLS	.62	. . .	.17	. . .
NCH	1.26	. . .	. . .	. . .
RACE	.28	. . .	.29	. . .
HLTH	.06	. . .	.21	. . .
URATE	4.87	17.5	5.81	4.2
FDI	. . .	. . .	29.61	4.2
OLFS	.30	. . .	.21	. . .
n	802		528	

a. For a description of the variables, see the text.

b. The mean is the proportion receiving a certificate between the years 1967 and 1972; the percent NA is larger than for the measured variable because the percent NA refers to receipt of a certificate since leaving school.

c. The mean includes estimated values for the 27.5 percent for whom data were not available.

d. The figure is the natural logarithm of the wage. The wage rates would be $2.27 and $2.38, respectively.

e. Persons for whom data are not available or who are not married, spouse present enter the calculation of the mean with an income figure of zero.

"other" sources; for mature women, the NLS tape reported figure of family income less her reported figure of total wage and salary income. (The variable for mature women has a very high proportion of unavailable data, .35, but the figure is small for the young women, .03. The "not available" observations are entered as zeroes in estimating the model.)

CLS: a child less than six years of age lives in the household

NCH: young women only—the number of children living in the household

RACE: a black person

HLTH: a health limitation prevents or limits the amount and kind of work

URATE: the unemployment rate in the area of residence at the date of the 1972 survey

FDI: available only for mature women at the 1972 survey date; a variable indicating the expected proportion of females among employed persons if the area's industry structure employed in each industry the same proportion as the national average.[12] (The variable is available for young women at the 1971 survey. We experimented with using this value of the variable. However, because of migration and other factors, the data not available proportion would be .31 if this were done.)

The variables CERT, MIG, MIGNJ, MSP, CLS, RACE, and HLTH are dummy variables which assume the value one if the person possesses the characteristic and the value zero otherwise. All other variables are continuous.

12. The variable is one developed by Bowen and Finegan [1969, 772-776].

Experience Designators

Total experience (EXP). The original question about lifetime work experience since school in the 1967 National Longitudinal Survey for Mature Women recorded years of work experience as the years in which the woman reported working six months or more. Surveys after that date report weeks worked for the survey period. We have equated the reported weeks of work to one year in the succeeding surveys if as many as 26 weeks are reported.[13] But linking data from five surveys leads to incomplete information for over one-fourth (27.5 percent) of the sample. The usual treatment for estimating experience in the literature is the sum of the term: age minus years of schooling completed minus six. Since it has been shown elsewhere that this estimating procedure produces biased coefficients for women owing to their movement between full-time household and labor market activity and because exclusion of the observations having incomplete information would drastically reduce an already relatively small sample, we have estimated experience for the observations of missing information.[14] Variables of the model for

13. The procedure has been followed in work based upon the report of a study of part-week work [Jones and Long 1978, 123-124]. The 1971 NLS survey covered the period between 1969 and 1971. The weeks worked reported by this survey have been transformed to years as follows:

Weeks Worked	Years
1-25	0
26-52	1
> 52	2

14. The difference between using the standard approach to estimating experience and using actual experience in unemployment equations for women is illustrated in [Jones and Long 1979].

estimation were race, age, and number of children who had ever lived with the woman.[15]

The sample of young women were asked in 1973 to report the number of years since leaving school in which they had worked six months or more. This question provides data for calculating an experience variable for the year 1972 that is comparable to the variable for mature women. Because of the smaller proportion of cases for which data were not available for the young women, we do not undertake an estimation process, but instead enter a zero value for the variable for those observations where the data are not available.

Recent experience. In constructing the model we have suggested that the availability of information flows to persons not in the labor force may depend upon whether they have recent work experience. The variable of length of the recent work experience (REXPL) is the summation of the number of years in which work experience amounted to 26 weeks or more during the interval 1967-1972 for mature women and the interval 1968-1972 for the young women. Since the variable is constructed independently of total experience, the young women may have been enrolled in school during these years of recent work experience.

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15. The variable of race was included because the higher labor force participation of black women infers more years spent in the labor force and hence of work experience. The older the woman is, the longer her possible span of work experience. The work of Mincer and Polachek [1974] has pointed to the impact of family size upon years of labor market attachment.

The estimating equation was based on a sample of persons for whom the characteristics of experience, education, marital status, race, current wage, age, and number of children were known. The equation takes the form:

$$\underset{}{EXP} = \underset{(-6.82)}{-10.2812} + \underset{(11.49)}{.6294}\,RACE + \underset{(17.99)}{3.8640}\,AGE - \underset{(-15.55)}{1.0939}\,EBC$$

$n = 1882$ $\quad R^2 = .26$ $\quad$ t-values in parentheses

EBC = number of children

Another way of evaluating recent work experience has been made for the mature women with the variable REXPI, which designates that there was recent work experience but that this experience was not continuous. The variable was constructed to investigate if, among reentrants, there was a segment of individuals who significantly contributed to unemployment because of a pattern of frequent labor force turnover. We do observe that the characteristic describes 24 percent of the sample of mature women.

The third version of recent labor force experience to be indicated is the labor force status of the individual during the time interval of the last survey (mature women, 1969-1971; young women, 1970-1971). The mature women fall into four categories: (i) employed at some point during the last survey interval, but reporting no unemployment during the period (LYEM); (ii) unemployed not at the time of interview for the last survey but at any other point during the last survey's interval (LYUN); (iii) not in the labor force throughout the previous survey period (LYNILF); and (iv) data not available (DNA).[16] For the sample of young women, LYNILF and DNA are combined. While 91 percent of the young women fall into the groups LYEM and LYUN, only 81 percent of the mature women fall into the three groups LYEM, LYUN, and LYNILF (see table 3-2).

The experience variables of EXP and REXPL are continuous. All other experience variables assume the value one if the person possesses the characteristic and the value zero otherwise.

16. We remove from the group LYUN those persons who were unemployed at the date of interview in order to avoid the dependent variable and LYUN designating the same spell of unemployment. Thus, we avoid observing a reentrant with unemployment where the spell of unemployment that classifies the reentrant as unemployed is one that continued from the survey period of 1971 into the survey period of 1972.

Table 3-3
Potential Wage Estimating Equations

Independent variable[a]	Young women		Mature women	
	Coefficient	t-value	Coefficient	t-value
Constant	4.4209	67.03	4.6384	92.69
EXP	.0270	8.35	.0100	7.45
ED	.0792	16.14	.0675	17.87
SOUTH	-.1318	-6.94	-.1704	-8.41
SMSA	.1229	6.36	.1634	8.08
RACE	-.0483	-2.26	-.1075	-4.99
HLTH	-.0536	-1.25	-.0599	-1.92
CERT	.0671	3.03	.0946	3.99
R^2	.28		.36	
n	1533		1583	

a. For the descriptions of the variables EXP, ED, RACE, HLTH, and CERT, see the text of this section. SOUTH and SMSA are dummy variables indicating residence in the South and in a Standard Metropolitan Statistical Area.

Potential Wage

Because the literature [Jones and Long 1981] indicates a pay differential between full-week and part-week jobs and because we do not know whether the person sought full-week or part-week work, we estimate the person's potential wage from a sample drawn from the 1972 NLS of currently employed full-week wage and salary employees. The dependent variable of the estimating equation is the natural logarithm of the current wage. The independent variables of the potential wage equation are ones that have been used elsewhere in the literature and comprise experience (including, where relevant, estimated values), education, residence in the South, residence in a Standard Metropolitan Statistical Area, race, condition of health, and possession of a certificate (lifetime history) to practice a profession or trade.[17] The equations for the samples of young and mature women are reported in table 3-3 above.

17. This form of the potential wage estimate was used in [Long and Jones 1980].

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4
Estimation of the Model

The purpose of the model is to understand how particular characteristics affect the probability that a woman will undergo a spell of unemployment when she reenters the labor force. The dependent variable identifies whether she underwent a spell of reentry unemployment during a survey period of 12 months. The dependent variable is dichotomous and equal to one if she underwent a spell or zero if she did not. The model is estimated using probit analysis instead of the more familiar regression analysis because the latter has several difficulties when the dependent variable is categorical.[1] The values of the coefficients of the independent variables that we report when providing an estimate of the model may be read as one would read regression coefficients.[2] The coefficients indicate the change in the probability of the woman's being unemployed upon reentrance for a one-unit change in the value of the independent variable if the variable is continuous. If the variable is dichotomous, the coefficient is the difference in the probability for the person undergoing reentrant unemployment if she has the

1. These difficulties include the following: regression coefficients may be biased, the predicted value of the dependent variable may be outside the probability range which is from 0 to 1, and the "t-statistics" are affected by heteroscedasticity. For a discussion of the probit analysis, see [Pindyck and Rubinfeld 1976].

2. The reported coefficients are the partial derivatives of the probability with respect to the variables calculated at the variable means.

characteristic (for example, black) compared with the probability for a person who does not have the characteristic (for example, not black).

In interpreting the reported results, one should recall that the impact upon reentrant unemployment stated for a particular independent variable always assumes that the effect of all other variables in the estimating equation is held constant. For example, using equation 1 of table 4-1 reported below, we may make the statement that an additional year of experience reduces the probability of a woman's undergoing a spell of unemployment by 0.63 of one percent. Another way of thinking about the coefficient is to assume that we are looking at two groups of women (A and B) who are identical with respect to every independent variable of the model except experience. Then, if experience is larger by one year for group A than for group B, we would expect the percent of individuals in group A who experience unemployment upon reentrance to be lower by 0.63 percent.

Our findings may not coincide with aggregate descriptions typically provided about the unemployed for two reasons. The first is that aggregate descriptions fail to isolate the impact of a particular variable. An aggregate description may be that black women, spouse present, have higher unemployment rates than other women. The validity of linking race and unemployment cannot be assumed however until one standardizes, as in the probit analysis, for differences between black women and white women in a vector of characteristics that may influence the probability of a spell of unemployment such as age, education, and migration probabilities. A second reason why our findings may not coincide with aggregate descriptions is that we are studying the unemployment experience of a particular group of women who are reentrants. We have suggested in earlier sections of this report that what appears as the typical assumption about this group in the literature is that they *all* undergo

a spell of unemployment by virtue of the definition of unemployment. Our presentation in section 2 has shown that they *all* do *not* undergo a spell of unemployment. We explore new territory in this section as we attempt to find a set of characteristics that differentiates those who *do* undergo a spell from those who *do not.*

Table 4-1
Model Estimate, Mature Women:
Work-Seeking Plans of Not-in-Labor Force Persons

	Equation 1		Equation 2	
	Coefficient	t-value[a]	Coefficient	t-value
ED	-.0335	-1.95***	-.0347	-2.01**
CERT	.0540	.74	.0488	.67
EXP	-.0063	-1.72***	-.0065	-1.80***
OLFS	.1315	2.59*	.1291	2.54**
MIG	.1000	1.09	.0795	.85
POTWAG	.2552	1.43	.2710	1.51
MSP	-.0405	-.76	-.0431	-.80
HINC	.0000	.70	.0000	.67
CLS	.0268	.46	. . .	. . .
RACE	.0467	.79	.0557	.96
HLTH	-.0003	-.01	.0024	.04
URATE	-.0010	-1.19	-.0008	-.83
FDI	. . .	. . .	-.0035	-1.28
-2*LogLR	17.05		18.47	

a. T-values are the ratios of the probit maximum likelihood coefficients to their standard errors.

-2*LogLR = -2 times the log likelihood ratio.

*Significant at the 1 percent level.
**Significant at the 5 percent level.
***Significant at the 10 percent level.

As noted earlier, the model to be tested takes the form that the probability of a reentrant undergoing a spell of unemployment is a function of four vectors (groups) of variables indicating the receiving of labor market information, the acceptance wage, the mean of the market wage-

offer distribution, and prior search plans. We begin this section with a discussion of the mature women because they were the original focus when the study was initiated. Then we discuss the findings for the sample of young women.

Mature Women

The Basic Equation

Significant variables. Equation 1 of table 4-1 serves as the benchmark for the discussion of estimation of our model. This equation includes all variables except those relating to recent labor market experience and the sex orientation of the structure of industry demand. In referring to variables as significant, we will include through the upper limit of the 10 percent level. By this standard only three variables are significant: education, experience, and the variable of planned to seek work. The latter indicates that expressed plans to seek work at a future date are acted upon.

Education and experience may affect the probability of reentrant unemployment either by raising the level of the acceptance wage or by affecting both the flow of labor market information available to the woman and her ability to evaluate and use that labor market information with respect to yielding an employment opportunity for her. The impact of education and experience upon the acceptance wage is accounted for in the potential wage variable since both education and experience are included in determining the value of the potential wage. Thus, the signs and significance of education and experience in the estimates of the model refer to the role of these variables as they influence the flow and evaluation of labor market information.

According to equation 1 of table 4-1, increasing amounts of formal schooling reduce the probability that a woman will undergo a spell of unemployment when she reenters the

labor force. From our discussion of the model in section 3, this reduced occurrence of reentrant unemployment takes place because her higher education level generates a larger network of friends and acquaintances who work and can inform her of existing job openings even though she is not in the labor force. Furthermore, she has more knowledge of how to evaluate and act upon the information in a manner so that an employer will hire her. Increased experience has been described in the presentation of the model as acting similarly to education in reducing reentrant unemployment. Because experience, as well as education, is negative and significant in equation 1 of table 4-1, experience must, independently of education, enhance the woman's availability to a larger network of information flows and her ability to evaluate information.

Equation 2 of table 4-1 differs from equation 1 by the addition of the variable representing the sexual orientation of industry structure (FDI) in the area in which the woman resides and by the omission of the variable of a child less than six years of age in the household (CLS). Equation 1 omitted FDI because the variable is not available for the sample of young women. Equation 2 drops the variable CLS in order to investigate whether the finding of insignificance for CERT, the third member of the information vector, is due to CLS and CERT proxying the same event in a woman's life. If the variables were identifying the same event, neither would appear as significant because of the statistical problem of multicollinearity.

Because a large proportion of the women in the mature sample are toward the end of their child-bearing years, the variable CLS may simply be an indicator of larger family size that has delayed reentry into the labor force. The variable receipt of a certificate (CERT) to practice a profession or trade was defined for the mature women to cover only a spell of recent years (1967-1972). If the older woman with a child

less than six reenters the labor force, her reentry may be one beginning a more permanent stage of labor force attachment in later years as described by Mincer-Polachek [1974]. The event may coincide with skill enhancing activity in preparation for this later stage, such as receipt of a certificate, so that both CERT and CLS would be proxying the same event.

The added variable FDI is not significant, nor is it significant if the unemployment rate of the area of residence is dropped from the model (equation not reported). When CLS is omitted from the model, the coefficient and t-value of the variable CERT, and of other variables, are essentially unaffected. Hence, the variable CLS is not serving to indicate that our observed incident of reentry is associated with a particular life-cycle labor market attachment stage for the woman.

Signs of variables. The relatively small sample size may be affecting the limited success in identifying significant variables of the model.[3] The sign relationships of the insignificant independent variables are of interest both with respect to the predictions of the model and in later comparison for consistency of results when the model is estimated for the young women. Four variables fail to carry the predicted sign: receipt of a certificate (CERT), the presence of a child less than six years of age (CLS), having a health limitation (HLTH), and the area's unemployment rate (URATE).

3. The model does better "explain" reentrant unemployment for the young than for the mature. The test statistic -2 times the log of the likelihood ratio (λ), which is reported for each equation of tables 4-1 through 4-7, is a test for the overall significance of an equation. According to the values of -2 times λ, estimates of the model are significant for mature women only in table 4-3 (5 percent and 1 percent levels) but are always significant for young women (1 percent level).

Our general findings are supported and the significance level maintained for the young if the model is estimated as reported in table 4-5 with OLFS deleted and REXPL and MIGNJ as the variables for experience and migration respectively. An estimate for the mature women of the model, including only the variables of largest t-values in table 4-1, is almost significant at the 10 percent level ($-2 \cdot \lambda = 7.61$, whereas the test statistic is equal to 7.78 at the 10 percent level).

We have already suggested that CERT may be indicating the work stage for the woman of contemplation of a more permanent attachment to the labor market. While the process of acquiring the certificate may introduce her to a channel of information about job openings, this characteristic associated with CERT may be outweighed for the mature women by a desire to be more selective among job openings because of plans for relatively long job tenure. As was noted earlier, mature women who have a child less than six years of age in the household may be women of larger total family size. Because of the larger total family size, these women would have a greater probability of more easily arranging for child care through, for example, a teenage son or daughter in the home. The more easily made child-care arrangements would lessen the marginal cost of search and raise the acceptance wage, and hence increase the probability of rejecting a job offer received while the woman was not in the labor force. Older women with young children may also be relatively more removed from job information flows than women of similar education or prior work experience who do not have young children. This isolation would occur if their friends and acquaintances were more frequently women who also have young children. The lower labor force participation of women with children means that, as a group, their associates would have more limited knowledge of a job opening compared with associates who, as a group, had a higher labor force participation rate. The health variable has the lowest t-value of any independent variable and flips sign between the two equations reported in table 4-1.

The negative sign of the unemployment rate (URATE) of an area may be due to an offsetting factor not considered in the presentation of the model in section 3. In section 3 the prediction of a positive sign for URATE came from placing emphasis upon the situation that in an area of higher unemployment the improved opportunity for the employer

to consider other applicants would mean a reduced probability for the woman not in the labor force to be hired in the job opening that she heard about from a friend or acquaintance. The offsetting factor not considered was that women in areas of higher unemployment rates may have lower acceptance wages. If unemployment rates across areas are stable as Mincer proposed [Mincer 1966], women in areas of high rates will become aware of this characteristic of the labor market and adjust their acceptance wages downward. When the woman reenters the labor force, she is more likely to consider satisfactory a job opening that she hears about from a friend or acquaintance and for which the employer tenders her an offer. If the effect of the decreased acceptance wage is more important than the reduction in the flow of information outside the labor market that yields employment opportunities, then URATE would display the observed negative sign.

Additional Equations

Equations are presented in tables 4-2 and 4-3 which have as their purpose the examination of recent labor market experience upon reentrant unemployment. When presenting the model, we argued that the nature of recent experience affected the available network of labor market information.

In table 4-2 the two variables studied are the length of recent work experience (REXPL) and whether the recent work experience was interrupted by a year in which the person did not work as much as six months (REXPI). The equations of table 4-2 also have deleted the work-seeking plan variable (OLFS). The purpose of the deletion is to determine if the findings reported above from the basic equation were affected by the entrance of OLFS into the model. According to the equations of table 4-2 our earlier reported results concerning the vectors of variables reporting information, the acceptance wage, and the market wage-offer distribution re-

main virtually unchanged. Since we thus observe prior work-seeking plans to have a role independent of these vectors in determining the probability of reentrant unemployment, it would appear that decisions to reenter the labor force and undertake active search can have a long gestation period. Furthermore, these long-term decisions are affected by factors not incorporated in our model. Such factors may include a change in the health or income status of the husband or the need to support a child entering college.

Table 4-2
Model Estimate, Mature Women: Recent Work Experience

	Equation 1		Equation 2	
	Coefficient	t-value[a]	Coefficient	t-value
ED	-.0341	-1.99**	-.0345	-2.01**
CERT	.0689	.95	.0677	.94
EXP	-.0068	-1.75***	-.0071	-1.90***
REXPL	.0016	.10	. . .	. . .
REXPI	. . .	. . .	.0295	.59
MIG	.0778	.85	.0792	.87
POTWAG	.2480	1.39	.2532	1.42
MSP	-.0420	-.79	-.0402	-.75
HINC	.0000	.69	.0000	.64
CLS	.0273	.47	.0264	.46
RACE	.0544	.92	.0541	.92
HLTH	.0025	.05	.0016	.03
URATE	-.0011	-1.27	-.0011	-1.25
-2*LogLR	10.38		10.72	

a. T-values are the ratios of the probit maximum likelihood coefficients to their standard errors.

-2*LogLR = -2 times the log likelihood ratio.

*Significant at the 1 percent level.

**Significant at the 5 percent level.

***Significant at the 10 percent level.

In the equations of table 4-2 neither REXPL nor REXPI are significant, and the sign of REXPL is not as expected. The duration of continuous recent work experience does not appear to add demonstrably to the available information network. Women with an interruption in their recent work experience can be expected to include persons who have a greater tendency to frequent movement into and out of the labor force. According to the t-value reported in equation 2 for REXPI, these persons do not have a higher probability of reentrant unemployment than other reentrants when we hold constant across women the set of other characteristics that are included in our model.

In table 4-3 we use the labor force status of the mature women during the time interval of the prior survey (1969-1971) as the dimension of recent experience. The base (omitted) group are persons for whom labor force status during the time interval 1969-1971 could not be determined. Comparison of the coefficients of LYEM (the person was employed with no observed unemployment during the survey period), LYUN (the person was unemployed during the survey period but not at the date of the 1971 survey) and LYNILF (the person was neither employed nor unemployed during the survey period) indicates the effect of prior labor market experience upon a spell of reentrant unemployment. Since OLFS and LYNILF may be strongly correlated, the results are reported both with and without the variable OLFS. However, as the comparison of the two equations shows, the inclusion of OLFS does not markedly alter the findings.

According to the values of the coefficients, the probability of a spell of unemployment upon reentrance is least for women without labor market experience during the previous two years. In fact, being out of the labor force reduces the probability of a spell upon reentrance as does being employed without a spell of unemployment. If the person ex-

perienced a spell of unemployment during the previous survey period, the probability of a spell of unemployment upon reentrance is enhanced. Both LYUN and LYNILF are significant, but LYEM is not. Education, which was significant in the equations of tables 4-1 and 4-2, is no longer significant. The reduction in the t-value of education may come from the correlation between education and unemployment. Among the three categories LYEM, LYUN, and LYNILF, LYUN is the only one for which the simple correlation coefficient with education is significant.

Table 4-3
Model Estimate, Mature Women: Labor Force Activity, 1969-1971

	Equation 1		Equation 2	
	Coefficient	t-value[a]	Coefficient	t-value
ED	-.0277	-1.59	-.0270	-1.55
CERT	.0536	.74	.0389	.53
EXP	-.0095	-2.47**	-.0090	-2.33**
LYEM	-.0780	-1.30	-.0968	-1.60
LYUN	.1401	2.02**	.1246	1.78***
LYNILF	-.1240	-1.90***	-.1279	-1.96**
OLFS	. . .	. . .	.1300	2.51***
MIG	.0696	.76	.0917	.99
POTWAG	.2050	1.14	.2105	1.17
MSP	-.0276	-.51	-.0277	-.51
HINC	.0000	.98	.0000	.98
CLS	.0311	.53	.0297	.51
RACE	.0395	.66	.0322	.54
HLTH	.0041	.09	.0012	.02
URATE	-.0010	-1.13	-.0090	-1.06
-2*LogLR	28.25		34.54	

a. T-values are the ratios of the probit maximum likelihood coefficients to their standard errors.

-2*LogLR = -2 times the log likelihood ratio.

*Significant at the 1 percent level.
**Significant at the 5 percent level.
***Significant at the 10 percent level.

The contrary sign findings for LYUN and LYNILF suggest that the variable set may be measuring other than the hypothesized information flows. The person classified as LYNILF does not have the same degree of labor market attachment for recent years as the person classified as LYEM. Our potential wage estimate makes no allowance for the depreciation of market skills because of time recently spent in nonmarket activity. Yet these depreciation rates are not insignificant for women of this age group.[4] Thus, our estimates of the potential wage are biased upward for the LYNILF group. Insofar as this variable of the acceptance wage vector is reduced in its ability to explain appropriately the variance in the decision to undergo a spell of unemployment upon reentry, the variable LYNILF will capture, in part, the group's lower acceptance wage and thus an increased probability of accepting the job offer obtained without active search.

Fellner has suggested that the category of reentrant unemployment is a misinterpretation of the "reason" for unemployment. He has proposed that a spell of reentrant unemployment constitutes the resumption of an unemployment spell that was generated either by quitting or by layoff. According to this interpretation, we may expect that what we record as the appearance of a spell of unemployment during the survey period 1969-1971 (LYUN) will include spells of this period that were interrupted not by employment but by a movement out of the labor force. Thus, the variable LYUN is not simply indicating the labor force activity of search that can generate useful labor market information at a later reentry into the labor force. The variable LYUN is also registering the inability of the woman to successfully complete the

4. Jones and Long [1979], using 1972 data, found recent home time to be depreciating of market skills on a larger order of magnitude than the spell spent out of the labor market by the woman between the birth of the first child and her return to work. These results are a reversal of the findings of Mincer and Polachek [1974].

search process and thus her resumption of search at a later date.

Young Women

The Basic Equation

Significant variables. We report in table 4-4 the estimate of the basic equation for the sample of young women together with a comparable estimate for the mature women. Only one variable (the intention to seek work) is significant in both equations. While education and experience were significant for mature women, the significant variables for the young women are receiving a certificate to practice a profession or trade and race. Persons who possess a certificate (CERT) are less likely to undergo a spell of unemployment upon reentrance, and black women are more likely to undergo a spell. Since the significant correlation coefficient between education and CERT is larger for young than mature women ($r = 0.39$ and $r = 0.19$ respectively), we have rerun the equation for young women omitting the variable CERT. The t-value of education (ED) falls further in the reestimation so the absence of significance for ED in the sample of young women cannot be attributed to multicollinearity between ED and CERT.

The difference between young and mature women in the significance of education may relate to differences in their response to information from traditional sources. We noted in section 2 that it is reasonable to assume that the mature women's sample is comprised of reentrants. However, we observed for the young women that, although none were enrolled in school at the date of the 1972 NLS interview, approximately one-fifth spent time in school during the period 1971-1973. By 1972, the year of our survey data, sex discrimination had received considerable public attention. The Equal Rights Amendment (ERA) went to the states for

ratification in 1972 and, by the end of that year, 22 of the 35 states that ratified the amendment during the decade of ERA's consideration had already done so [Cavanaugh 1979]. Among the young, the more educated "reentrants" may have been ones who chose to seek new opportunities for women accorded by legislative and attitudinal changes. Ascertaining these opportunities could require active search instead of responding to a job offer while not in the labor force. Thus, the probability of reentry unemployment at higher levels of education would increase and weaken the hypothesized negative relationship between the dependent variable and education.

Table 4-4
Model Estimates: Young and Mature Women

	Young women		Mature women	
	Coefficient	t-value[a]	Coefficient	t-value
ED	-.0092	-.49	-.0335	-1.95***
CERT	-.1177	-2.45**	.0540	.74
EXP	-.0150	-1.57	-.0063	-1.72***
OLFS	.1081	2.78*	.1315	2.59*
MIG	.0493	1.08	.1000	1.09
POTWAG	.1489	.77	.2552	1.43
MSP	-.0317	-.62	-.0405	-.76
HINC	-.0000	-.78	.0000	.70
CLS	-.0360	-.88	.0268	.46
RACE	.0892	1.99**	.0467	.79
HLTH	.0922	1.26	-.0003	-.01
URATE	-.0002	-.29	-.0010	-1.19
-2*LogLR	37.21		17.05	

a. T-values are the ratios of the probit maximum likelihood coefficients to their standard errors.

-2*LogLR = -2 times the log likelihood ratio.

*Significant at the 1 percent level.
**Significant at the 5 percent level.
***Significant at the 10 percent level.

One interpretation of the stronger showing for race among young women would be that more discrimination exists for younger black women. This would be the case insofar as their potential occupational distributions differed, with the generally better-educated young black women attempting more than the lesser-educated mature women to enter white-collar jobs as they were exposed to accounts of national political efforts to reduce discrimination. The work of Flanagan [1976] suggests another type of explanation, but one that is still focused upon discrimination. Our estimate of the potential wage within the acceptance wage vector does allow for racial wage differences.[5] However, the potential wage is calculated from data for employed persons. Flanagan has referred to ". . . systematic tendencies toward over-optimistic wage expectations among youth," which early periods of unemployment serve to bring into line with the wage-offer distribution [Flanagan 1976, 303]. Our potential wage estimate, because of its calculation from data for employed persons, would not reflect the "over-optimism" and hence would have a downward bias reducing its ability to explain reentrant unemployment.[6] The significance of the variable of race for the young, but not for mature, women would be reflecting that the higher acceptance wages of young black women lead more frequently to the rejection of jobs learned about while outside the labor force. Thus, the probability of young black women engaging in active search (a spell of unemployment) would be increased.

Signs of variables. While four of the independent variables in the equation for mature women had a sign opposite that of the one predicted in table 3-1, only two (husband's income and the area's unemployment rate), have opposite signs for

5. Race enters the estimating equation as an independent variable. See section 3 of this report.

6. While neither t-value is significant, the t-value of the potential wage variable is smaller for young than mature women.

the young women's equation reported in table 4-4. On the basis of the quality of constructed variables, we would place more reliance on the observations for husband's income from the sample of young women where the "data not available" count amounted to only 2.9 percent of the sample; for the mature women the count was 35.2 percent. Our presentation of the model hypothesized that husband's income serves as a proxy for the discount rate, which leads to the prediction that the offers received from outside the labor market would have a higher probability of acceptance by women of low income husbands. At the younger ages, the low end of the distribution of husband's income may more frequently contain a negative transitory income component. The observed incomes of younger husbands would be "unusually" low for jobs of large human capital endowments because this would be the period of life for the investment process (enrollment in school and employment at jobs that provide training for further advancement in his occupation) to take place. Mincer [1962] found in his study of the labor force participation of married women that negative transitories encouraged the wife's labor force participation. Since the young woman's entrance into the labor force at this stage of the marriage contributes a higher proportion of family income than in later years, the immediacy of need for family income may be outweighed by a desire for a higher wage in order to have family income move closer toward the generally higher income stream that this family expects in later years. The higher acceptance wage would raise the probability of reentrant unemployment. Hence, the sign relationship between husband's income and the probability of reentry unemployment would differ by age grouping because of differences in the appropriate interpretation of observed annual income between persons of different ages.

Additional Equations

Alternative measurements of variables. We have measured experience (EXP) as the years of work of six months or more since leaving school. We have already noted that a large proportion of the sample of young women had had a recent association with school. Work experience during school also offers the opportunity to develop a network of contacts that can provide job information. Our variable of recent work experience (REXPL), as a summation of years of work experience of six months or more for the period 1968-1972, is inclusive of time spent in school. Hence, the variable REXPL can more appropriately indicate total work experience for the young women than the variable EXP. In equation 1 of table 4-5 we have substituted REXPL for EXP. We find that the t-statistic of REXPL, as different from EXP, is significant. Hence, when experience is measured inclusive of school years, additional experience significantly reduces the probability of a spell of unemployment for young as well as mature women.

We have also experimented with redefining the variables of migration (MIGNJ) and the child indicator (NCH) of home productivity for the young women. In recording the data about residence change, the NLS asked young women who lived in a different county or Standard Metropolitan Statistical Area than when last interviewed, "Did you have a job lined up here at the time you moved?" Our new variable, MIGNJ, is a dummy variable equal to the number one if the person answered no and zero otherwise. Whereas migrant status (MIG) applied to 21 percent of the sample, almost three-fourths of the migrants (15 percent of the sample) did not have a job lined up. The ages of the young women are such that the likelihood of assistance from teenage family members in the care of young children is small. Under these circumstances the activity of child care will fall more on the

woman in the young sample, so that we have substituted the variable of number of children in the home (NCH) for the dummy variable of a child in the household less than six years of age (CLS).

Table 4-5
Model Estimate, Young Women: Alternative Measures of Variables

	Equation 1		Equation 2	
	Coefficient	t-value[a]	Coefficient	t-value
ED	.0035	.22	-.0108	-.58
CERT	-.1067	-2.25**	-.1189	-2.48**
EXP	. . .	. . .	-.0143	-1.50
REXPL	-.0331	-1.76***	. . .	. . .
OLFS	.1030	2.63*	.1045	2.68*
MIG	.0507	1.11	. . .	. . .
MIGNJ	. . .	. . .	.0919	1.87***
POTWAG	.0382	1.23	.1305	.67
MSP	-.0338	-.66	-.0369	-.73
HINC	-.0000	-.90	-.0000	-.60
CLS	-.0495	-1.18	. . .	. . .
NCH	. . .	. . .	-.0304	-1.87***
RACE	.0802	1.81***	.1004	2.21**
HLTH	.0902	1.23	.1030	1.40
URATE	-.0000	-.03	-.0001	-.22
-2*LogLR	37.84		42.88	

a. T-values are the ratios of the probit maximum likelihood coefficients to their standard errors.

-2*LogLR = -2 times the log likelihood ratio.

*Significant at the 1 percent level.
**Significant at the 5 percent level.
***Significant at the 10 percent level.

The substitutions of MIGNJ and NCH are reported in equation 2 of table 4-5. Both variables are of the expected sign and significant, but MIG and CLS were not (equation 1). Persons who migrate without a job may migrate for the purpose of searching for work. Whether the migration is for this purpose or to accompany a husband, the information

network of personal contacts is broken and knowledge of the labor market must be acquired anew. Thus, the probability of reentrant unemployment is increased. When the mother has more young children in her charge, the cost of child care while actively searching is increased so that her acceptance wage is lower. Thus, when she reenters the labor force, she has a higher probability of taking a job offer without a spell of unemployment.

Recent work experience. We have repeated for the young women the estimation of the model inclusive of variables indicating the labor force status of the prior survey period. Since 91 percent of the young women, and only 52 percent of the mature women, were identified as employed (LYEM) or unemployed (LYUN) during the prior survey period, we have not separately identified persons not in the labor force during the survey period from persons for whom data were not available. Thus, the coefficients of LYEM and LYUN are to be compared with a reference group (the omitted category of the variable for equation estimation) that is inclusive of both persons not in the labor force and persons for whom data were not available.

Equation 1 of table 4-6 repeats equation 2 of table 4-5 which had the substitutions of MIGNJ and NCH. Equation 2 of table 4-6 adds the variables LYEM and LYUN. In equation 2, we observe also for young women a finding that was made for mature women. The probability of reentrant unemployment in this survey period is enhanced if the person underwent a spell of unemployment during the prior survey period.

Addition of LYEM and LYUN to the equation alters the significance levels and signs of many other variables of the model. All of the variables previously significant—CERT, OLFS, MIGNJ, NCH, and RACE—are insignificant in equation 2 of table 4-6. Sign changes occur for ED, CERT,

EXP, POTWAG, HINC, HLTH, and URATE. What is involved in these findings is that the personal characteristics designated by the independent variables influence the probability of unemployment not merely in a one-year period but in successive years. The independent variables of the model have similar relationships to a reentrant spell of unemployment during 1971-1972 and to a spell of unemployment during 1970-1971. The simple correlation coefficient between the dependent variable and LYUN is 0.69. Characteristics that determine whether or not the person undergoes a spell of reentrant unemployment at a point in time are slow to change for the sample (e.g., possession of a certificate) or are invariant (race) over time. These characteristics impact similarly upon the probability of a spell of unemployment if the person moved into the labor force last year as well as being variables that influence unemployment from layoff and quitting in previous years.

The dependent variable and LYUN were not as strongly correlated for the mature women ($r = 0.16$) as for the young women. One reason for the lower correlation coefficient for mature women is the relatively large percent (19) of persons for whom labor force status of the previous year was not determined in the mature women's sample. Probably a more important reason is the difference in the life-cycle stage between the two groups of women and the effect that this difference has upon the composition of the reentrant population. Almost one-third of the reentrant mature women compared with one-tenth of the reentrant young women were not in the labor force during the prior NLS survey period. Furthermore, the time duration of the prior survey period was two years for mature women but only one year for young women. Hence, the probability is increased for a young woman that the reentrant process constitutes the resumption of search after a job from which she experienced layoff or quit unemployment. Her reentrance is part of a continued

labor market attachment, whereas the reentrance of the mature woman arises from a change in her association with the labor market due to changing relationships to the household generated by factors such as divorce or the maturing of her children.

Table 4-6
Model Estimate, Young Women: Last Year's Work Experience

	Equation 1		Equation 2	
	Coefficient	t-value[a]	Coefficient	t-value
ED	-.0108	-.58	.0197	1.16
CERT	-.1189	-2.48**	.0173	.39
EXP	-.0143	-1.50	.0022	.25
LYEM	. . .	. . .	-.5224	-5.83*
LYUN	. . .	. . .	.2974	6.69*
OLFS	.1045	2.68*	.0083	.24
MIGNJ	.0919	1.87***	.0192	.45
POTWAG	.1305	.67	-.2062	-1.18
MSP	-.0369	-.73	-.0301	-.67
HINC	-.0000	-.60	.0000	.77
NCH	-.0304	-1.87***	-.0171	-1.24
RACE	.1004	2.21**	.0109	.27
HLTH	.1030	1.40	-.0062	-.10
URATE	-.0001	-.22	.0004	.70
-2*LogLR	42.88		506.71	

a. T-values are the ratios of the probit maximum likelihood coefficients to their standard errors.

-2*LogLR = -2 times the log likelihood ratio.

*Significant at the 1 percent level.
**Significant at the 5 percent level.
***Significant at the 10 percent level.

Age. The members of the young sample range from 20 to 28 years of age. This decade can span a number of life-cycle events such as reentry associated with school-leaving or a temporary return to the labor force after marriage and the birth of a child. The strong association between unemployment in successive periods discussed with respect to table 4-6

may be age-related if the reentrant unemployment of the young is a resumption of a spell of unemployment due to quit unemployment. The young would experience higher quit unemployment as they sampled different work situations in order to determine the type of work situation that was satisfactory to them.

In table 4-7 we estimate the equations of table 4-6 but with the variable of age added. For both equations reported in table 4-7, age is significant and of opposite sign from that predicted when constructing the model. The *a priori* expectation of a positive association between age and the acceptance wage and thus between age and reentrant unemployment occurred because of the shorter job tenure of younger persons. This expectation may be outweighed, however, if reentrant unemployment represented more frequently the resumption of a spell of quit unemployment or if information flows and the ability to evaluate labor market information were less at younger ages.

When age is introduced into the model, the variable NCH (the number of children in the home) retains its negative sign but becomes insignificant. This reduced significance implies that the previous strong results for NCH were due to NCH representing not only the increased opportunity cost of time due to the presence of children upon the probability of reentrant unemployment but also the positive correlation between age and the number of children in the household.

We suggested earlier an age-related explanation for the significance of race with respect to reentry unemployment of the young. Since race continues to be significant in the presence of the age control variable in equation 1 of table 4-7, the earlier mentioned hypothesis of "over-optimistic" wage expectations among younger blacks is not supported. Instead, the continued significance of race supports the explanation that young black women may have been attempt-

ing to enter occupations during the early 1970s that older black women of the ages of our sample of mature women presumed closed to them.

Table 4-7
Model Estimate, Young Women: The Effect of Age

	Equation 1		Equation 2	
	Coefficient	t-value[a]	Coefficient	t-value
ED	-.0064	-.34	.0235	1.38
CERT	-.1160	-2.42**	.0231	.52
EXP	-.0080	-.79	.0082	.87
LYEM	. . .	. . .	-.5230	-5.83*
LYUN	. . .	. . .	.2938	6.66*
OLFS	.1016	2.60*	.0071	.21
MIGNJ	.0868	1.76***	.0128	.30
POTWAG	.1297	.67	-.2030	-1.17
MSP	-.0455	-.90	-.0368	-.82
HINC	-.0000	-.23	.0000	1.09
NCH	-.0148	-.82	-.0042	-.27
RACE	.0961	2.11**	.0100	.25
HLTH	.1170	1.58	.0087	.14
URATE	-.0001	-.20	.0004	.76
AGE	-.0171	-1.98**	-.0145	-1.90***
-2*LogLR	46.82		510.32	

a. T-values are the ratios of the probit maximum likelihood coefficients to their standard errors.
-2*LogLR = -2 times the log likelihood ratio.
*Significant at the 1 percent level.
**Significant at the 5 percent level.
***Significant at the 10 percent level.

The introduction of age into the model inclusive of the variables LYEM and LYUN (table 4-7, equation 2) also shows age as significant while not affecting the findings reported for equation 2 of table 4-6. The repetitiveness of undergoing unemployment continues through the age decade of the 20s.

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5
Summary and Policy Implications

Major Findings

This research has sought answers for two questions: (a) How frequently do women undergo a spell of unemployment upon reentering the labor force? and (b) What factors determine whether or not a woman undergoes a spell of unemployment upon reentering the labor force? The empirical information for this study has come from two samples of reentrants that were constructed from National Longitudinal Survey data for the year 1972. The sample of young women included persons 20-28 years of age, and the sample of mature women included persons 35-49 years of age.

Extent. While economists tend to assume that reentrance will be accompanied by an unemployment spell, we find that only approximately one of every three women undergoes a spell of unemployment upon reentrance. Among the persons of our samples, five of every ten young women and four of every ten mature women experienced a spell of some type of unemployment during the year 1972. Since these proportions are larger than one-third, it is evident that spells of unemployment from layoff, quits, and discharges are dispersed among persons who reentered the labor force without a spell of unemployment as well as those who underwent reentrant unemployment.

Determinants of reentrant unemployment. The model constructed for examining the determinants of reentrant unemployment emphasized the availability of labor market information, the wage at which the woman was willing to take a job (the acceptance wage), labor market conditions that would affect the availability of a job at her acceptance wage, and prior search plans. The independent variables of the model included education, certification in a profession or trade, years of work experience, marital status, a young child or the number of young children at home, migration, the potential market wage, husband's income, race, a self-reported health limitation, the area's unemployment rate, and an indicator of prior intentions to seek work. Possession of the characteristic or an increasing value of the variable for the first five variables (more education, work experience, or young children; having a certificate or married and spouse present) was hypothesized to reduce the probability that reentrance would be accompanied by a spell of unemployment. Possession of the characteristic or an increasing value of the variable for the remaining variables (being a migrant, black, with a health limitation, or with plans in 1971 to seek work at a later date; a higher potential wage, husband's income, or unemployment rate of the area) was hypothesized to increase the probability of a spell of unemployment upon reentrance. For the young women, the hypothesized sign relationships were observed for all variables except husband's income and the unemployment rate for the area. For the mature women, contrary signs were observed for the variables of certification, a young child in the home, a health limitation, and the unemployment rate of the area.

The significant variables for the mature women were indicative of the importance of flows of labor market information (education and work experience) and of the importance of prior decisionmaking in formulating plans for reentrance. Significant variables in the tests for young women also came from the information vector (certification; work experience,

inclusive of when the person was in school; and migration, if the person did not already have a job lined up when she moved) as well as prior search plans. In addition, the variables of the number of children at home and race were significant for the young women. Additional tests of the model for the young women showed that the significant relationship between the probability of a reentrant spell and the variable of number of children was age-related. In other words, the probability of undergoing a spell of unemployment upon labor force reentrance declined with age for women in their twenties as their responsibilities for child care increased.

Policy Implications

The findings of this research provide information for four aspects of labor market policy: (i) unemployment and "hardship," (ii) target groups, (iii) the secular movement of female unemployment rates, and (iv) understanding the female unemployment rate.

Unemployment and hardship. Construction of the model for undertaking the empirical work pointed out that there can be gains to active search, and hence a spell of reentrant unemployment does not indicate hardship. In fact, hardship may be indicated for those who do not undergo a spell of reentrant unemployment. Examples of this implication are associated with the independent variables of potential wage and husband's income. While neither variable was significant in the empirical tests, the hypotheses concerning their sign relationships are worthy of discussion.

The estimated coefficient of the potential wage was positively related to the probability of a spell of unemployment for both young and mature women. The estimate of the potential wage was based upon variables that determine a person's market worth. Insofar as market worth is a proxy for productivity, the woman's acceptance of just any job

regardless of her market worth in order to avoid a spell of unemployment would infer that resources were not directed to their maximum output. The consequences would be that the woman's future income stream is lower than it might otherwise be and that society's output is less.

Women married to lower-income husbands were hypothesized to have a lower acceptance wage. Their "need" to contribute to family income was presumed to reduce the wage at which they were willing to take a job and thus the probability of their undergoing a spell of unemployment. In other words, a higher acceptance wage would increase the probability of undergoing a spell of unemployment, but, at the same time, increase their future contribution to family income.

Target groups. The significant independent variables of the model, by identifying the characteristics associated with an increased probability of reentrant unemployment, indicate procedures or target groups if the policy decision were one to reduce reentrant unemployment. The significant variable list suggests that among young and mature women, those persons more likely to experience a spell of unemployment upon reentrance are the less educated, the less experienced, migrants, persons without young children, blacks, and those not identified with a particular type of work activity as indicated by certification. One important indication from this listing is that human capital enhancing activity (education, experience, and certification), which has been demonstrated to improve the person's labor market position with respect to wages [Mincer and Polachek 1974] and the probability of layoff and quit unemployment [Parsons 1972], also reduces the probability of reentrant unemployment.[1]

1. The human capital variables of education, experience, and certification are ones of general investment [Becker 1975]. The modeling of layoffs and quits links these reasons for unemployment to specific investment [Parsons 1972]. However, specific and general investment may be considered to be positively correlated (see [Barnes and Jones 1974, 446, fn. 12]).

We have hypothesized that the common dimension possessed by the human capital enhancing activity that leads to reentrant spell reduction is the availability of labor market information. The finding of the importance of information flows has two difficulties in policy application. The first is that the potential reentrant population is not an easily identifiable group to which the dissemination of labor market information can be directed. The second relates to experience being the one variable of the information vector that in some form was significant for both samples. For policy actions, the variable of experience does not have easily contrived institutional substitutes.

The coefficients of the variables of the presence of a child in the household and the unemployment rate in the area indicate that two types of frequently proposed programs will not reduce the probability of reentrant unemployment. Providing more child care facilities such as day-care centers may enhance the opportunities for women to participate in labor market activity. However, our research does not provide evidence that the limited availability of such facilities in the early 1970s and the strong reliance on at-home care for young children increased the probability of a spell of reentrant unemployment. Similarly, government policies to assist areas of high unemployment may impact to reduce the overall unemployment rate of those areas. But as far as female unemployment is concerned, we have found that an area's relatively high unemployment rate does not increase the probability of a spell of reentrant unemployment.

Our findings do suggest that policies to lessen racial discrimination can reduce the probability of reentrant unemployment particularly among younger women. For the young sample, the coefficient of the variable black was significantly positively related to undergoing a spell of reentrant unemployment. Adding an age variable to the model failed to alter this finding, so that the difference in the

probability of reentrant unemployment between blacks and whites was not confined to women in their early twenties. It is not as evident, however, that the effect of policies to lessen racial discrimination would extend into later years since the coefficient of race, while positive, was not significant in tests of the model using the sample of mature women.

Female unemployment trends. We anticipate that the labor force participation rate of women will continue to rise. At least one careful projection observes that between now and 1990 "most of the net additions to the labor force will be women between the ages of twenty-five and fifty-four, most will be married, and many will have young children" [Smith 1979, 16].

Our findings suggest that these sources of a projected rise in labor force participation will not necessarily lead to a rise in reentry unemployment. The spells of reentrant unemployment depend upon the two dimensions of the probability of unemployment upon reentrance (which we have studied) and labor force mobility between market and full-time nonmarket activity. The tests of the model have shown that married women and mothers of young children do not have a higher probability of a spell of unemployment when they move from full-time home activity into the labor force relative to other groups of women.

The female labor force participation rate increases projected for the 1980s can occur either because more women from a population group enter labor market activity for some period of time within the year or because women already in the labor force develop a more continuous labor market attachment. The rise in the rate that occurs from a more continuous labor market commitment infers an increase over time in the level of our model's independent variable of experience. The tests of the model have demonstrated that longer experience reduces the probability

of a spell of reentrant unemployment if the woman does interrupt her labor market attachment. Also, longer experience implies less labor force turnover. Thus, increases in participation that come from women developing a more continuous labor market attachment should reduce the level of reentrant unemployment in future years.[2]

Understanding female unemployment. Probably the major finding of this study is its documentation that labor force turnover and unemployment are not equivalent events. As population groups may differ in the extent to which they move into and out of the labor force so they may differ in the extent to which movement into the labor force is accompanied by a spell of unemployment. In fact, we observe that reentry into the labor force for the majority of women is *not* accompanied by a spell of unemployment. Furthermore, unemployment upon reentry has been demonstrated to be not a random event but one that can be associated with particular personal characteristics of the individual. Just as we would not model quit behavior assuming that all quits result in a spell of unemployment, so it is inappropriate to model all reentrant behavior as if all incidents of reentrance result in a spell of unemployment.

The estimation of the extent of reentrant unemployment has also indicated another piece of information for the study of unemployment from longitudinal data sets. The limited amount of research that has been undertaken on reentrants [e.g., Blau and Kahn 1981; Jones and Long 1981] assumes that reentrance can be identified at a point in time. Once the person was identified as a reentrant, any incident of

2. While an increased labor force commitment by women would reduce reentrant unemployment, the total female unemployment rate will not necessarily decline. A more continuous labor market attachment could mean that instances of involuntary and voluntary employment termination at which the woman formerly moved out of the labor force would appear, in the presence of continuous labor market attachment, as spells of unemployment due to layoffs and quits.

unemployment over an annual time span has been attributed to movement into the labor force. Our separation of reentrant spells from the total spells of unemployment of persons moving into the labor force, which was reported in section 2, implies that this approach can considerably magnify the dimension of reentrant unemployment. The estimated proportions of reentrants undergoing a spell of unemployment when moving into the labor force were increased by 39.0 and 25.4 percent for the young and mature samples, respectively, when the basis of identification was any period of unemployment including movement into the labor force, from layoff, and from quitting.

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